

Cambridge International AS & A Level

COMPUTER SCIENCE 9618/22

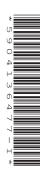
Paper 2 Fundamental Problem-solving and Programming Skills

October/November 2022

INSERT 2 hours

INFORMATION

- This insert contains all the resources referred to in the questions.
- You may annotate this insert and use the blank spaces for planning. Do not write your answers on the insert.



Functions

Note: an error will be generated if a function call is not properly formed or if the parameters are of an incorrect type or an incorrect value.

String and Character Functions

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LEFT (This String : STRING, x : INTEGER) RETURNS STRING
returns leftmost x characters from ThisString
Example: LEFT("ABCDEFGH", 3) returns "ABC"
RIGHT (This String : STRING, x : INTEGER) RETURNS STRING
returns rightmost x characters from ThisString
Example: RIGHT ("ABCDEFGH", 3) returns "FGH"
MID (This String: STRING, x: INTEGER, y: INTEGER) RETURNS STRING
returns a string of length y starting at position x from ThisString
Example: MID ("ABCDEFGH", 2, 3) returns "BCD"
LENGTH (ThisString: STRING) RETURNS INTEGER
returns the integer value representing the length of ThisString
Example: LENGTH ("Happy Days") returns 10
LCASE (ThisChar : CHAR) RETURNS CHAR
returns the character representing the lower-case equivalent of ThisChar
Non upper-case alphabetic characters are returned unchanged.
Example: LCASE('W') returns 'w'
UCASE (ThisChar: CHAR) RETURNS CHAR
returns the character representing the upper-case equivalent of ThisChar
Non lower-case alphabetic characters are returned unchanged.
Example: UCASE('a') returns 'A'
TO UPPER (ThisString: STRING) RETURNS STRING
returns a string formed by converting all characters of ThisString to upper case.
Example: TO UPPER ("Error 803") returns "ERROR 803"
TO LOWER (ThisString: STRING) RETURNS STRING
returns a string formed by converting all characters of ThisString to lower case.
Example: TO LOWER ("JIM 803") returns "jim 803"
NUM TO STR(x : <datatype1>) RETURNS <datatype2>
returns a string representation of a numeric value.
Note: <datatype1> may be REAL or INTEGER, <datatype2> may be CHAR or STRING
Example: NUM TO STR(87.5) returns "87.5"
STR TO NUM(x : <datatype1>) RETURNS <datatype2>
returns a numeric representation of a string.
Note: <datatype1> may be CHAR or STRING, <datatype2> may be REAL or INTEGER
Example: STR TO NUM("23.45") returns 23.45
```

IS NUM(ThisString : <datatype>) RETURNS BOOLEAN

returns the value TRUE if ThisString represents a valid numeric value.

Note: <datatype> may be CHAR or STRING Example: IS NUM("-12.36") returns TRUE

ASC (ThisChar : CHAR) RETURNS INTEGER

returns an integer value (the ASCII value) of character ThisChar

Example: ASC ('A') returns 65, ASC ('B') returns 66 etc.

CHR(x: INTEGER) RETURNS CHAR

returns the character whose integer value (the ASCII value) is \times Example: CHR (65) returns 'A', CHR (66) returns 'B' etc.

Numeric Functions

INT(x : REAL) RETURNS INTEGER

returns the integer part of x

Example: INT (27.5415) returns 27

RAND(x : INTEGER) RETURNS REAL

returns a real number in the range 0 to x (**not** inclusive of x).

Example: RAND (87) could return 35.43

Date Functions

Note: date format is assumed to be DD/MM/YYYY unless otherwise stated.

DAY (ThisDate : DATE) RETURNS INTEGER

returns the current day number from ThisDate

Example: DAY (04/10/2003) returns 4

MONTH (ThisDate : DATE) RETURNS INTEGER

returns the current month number from ThisDate

Example: MONTH (04/10/2003) returns 10

YEAR (ThisDate : DATE) RETURNS INTEGER

returns the current year number from ${\tt ThisDate}$

Example: YEAR (04/10/2003) returns 2003

DAYINDEX(ThisDate : DATE) RETURNS INTEGER

returns the current day index number from ThisDate where Sunday = 1, Monday = 2 etc.

Example: DAYINDEX (12/05/2020) returns 3

SETDATE (Day, Month, Year : INTEGER) RETURNS DATE

returns a variable of type DATE with the value of <Day>/<Month>/<Year>

Example: SETDATE (26, 10, 2003) returns a date corresponding to 26 October 2003

TODAY() RETURNS DATE

returns a variable of type DATE corresponding to the current date.

Text File Functions

EOF(FileName : STRING) RETURNS BOOLEAN

returns TRUE if there are no more lines to be read from file FileName

Note: the function will generate an error if the file is not already open in READ mode.

Operators

Note: an error will be generated if an operator is used with a value or values of an incorrect type.

&	concatenates (joins) two strings Example: "Summer" & " " & "Pudding" evaluates to "Summer Pudding" Note: may also be used to concatenate a CHAR with a STRING
AND	performs a logical AND on two Boolean values Example: TRUE AND FALSE evaluates to FALSE
OR	performs a logical OR on two Boolean values Example: TRUE OR FALSE evaluates to TRUE
NOT	performs a logical NOT on a Boolean value Example: NOT TRUE evaluates to FALSE
MOD	finds the remainder when one number is divided by another Example: 10 MOD 3 evaluates to 1
DIV	finds the quotient when one number is divided by another Example: 10 DIV 3 evaluates to 3

Comparison Operators

=	used to compare two items of the same type returns TRUE if the condition is true, otherwise returns FALSE
>	Notes:
<	 may be used to compare types REAL and INTEGER may be used to compare types CHAR and STRING
>=	 case sensitive when used to compare types CHAR or STRING cannot be used to compare two records
<=	Examples:
<>	 "Program" = "program" evaluates to FALSE Count = 4 evaluates to TRUE when variable Count contains the value 4

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